



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/623,209	08/29/2000	Alan Dean Michel	P00227- US-1	9934

7590 09/10/2003

Brian T Ster  
Ice Miller Donadio & Ryan  
One American Square Box 82001  
Indianapolis, IN 46282-0002

EXAMINER
----------

LEE, PING

ART UNIT	PAPER NUMBER
----------	--------------

2644

DATE MAILED: 09/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/623,209

Applicant(s)

MICHEL ET AL.

Examiner

Ping Lee

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to because there is no brief description of each box in Figs. 1-4. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
2. Applicant is required to submit a proposed drawing correction in reply to this Office action. However, formal correction of the noted defect may be deferred until after the examiner has considered the proposed drawing correction. Failure to timely submit the proposed drawing correction will result in the abandonment of the application.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 6, 12 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Mitchell et al (US 3,644,674).

Regarding claims 1 and 12, Mitchell et al (hereafter Mitchell) shows the first and second microphones (M1 and M3; M1 and M4; or other similar combination), the combining means (7), the cross-over means comprising a first filter means (5), a second filter means (8), and a unifying means (9, 10b).

Claims 1 and 12 also can be rejected based on the following. Mitchell shows the first and second microphones (M1, M2), the combining means (4) and the cross-over means comprising a first filter means (3, "delay" is an all-pass filter), a second filter means (5), and a unifying means (6, 10a, 7, 8, 9, 10b).

Regarding claims 6 and 17, Mitchell shows the means for subtracting.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 6, 9-12, and 20-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Wakui (US 5,701,344).

Regarding claims 1, 11, 12 and 22, Wakui shows the first and second microphones (31, 32), the combining means (37), the cross-over means comprising a first filter means (40, 42), a second filter means (39), and a unifying means (43).

Regarding claims 6 and 17, Wakui shows the means for subtracting (37).

Regarding claims 9 and 20, Wakui shows the high pass filter (42).

Regarding claims 10 and 21, Wakui shows the low pass filter (39).

7. Claims 1, 7-12, and 18-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Marash (US 6,178,248).

Regarding claims 1, 7, 8, 12, 18 and 19, Marash shows the first and second microphones (1a-1d), the combining means (3), the cross-over means comprising a first filter means (the paths connected to 2), a second filter means (8,9,10), and a unifying means (11 or the last combined path).

Regarding claims 9, 11, 20 and 22, although not explicitly show, the high pass filter is inherently included (col. 5, lines 1-2)

Regarding claims 10 and 21, although not explicitly show, the low pass filter is inherently included (col. 5, lines 28-29).

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 2, 3, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wakui, Mitchell or Marash.

Regarding claims 2, 3, 13 and 14, Wakui, Mitchell or Marash fails to show the first or second microphones as the omnidirectional microphones or a plurality of omnidirectional microphones. Both Wakui, Mitchell or Marash uses a general microphone for receiving the noise and the speech, wherein, one skilled in the art would have expected that the omnidirectional microphone would provide this function with a wide area coverage. Thus, it would have been obvious to one of ordinary skill in the art to modify the system of Wakui, Mitchell or Marash by utilizing omnidirectional microphone or omnidirectional microphones as the reception transducers in order to receive a sound from different directions and thus providing a wider reception area.

11. Claims 4, 5, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wakui, Mitchell or Marash in view of one of these references, Barlett (US 5, 473,684), Josephson et al (US 5,627,901) or McAteer (US 5,703,957).

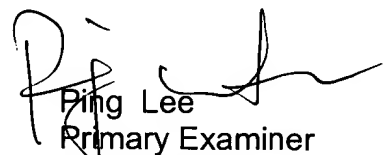
Regarding claims 4, 5, 15 and 16, Wakui, Mitchell or Marash fails to show the first or second microphones as the first order gradient microphone or a plurality of first order gradient microphones. Wakui, Mitchell or Marash uses a general microphone for receiving the noise and speech, wherein, one skilled in the art would have expected that the first order gradient microphone would provide this function with a narrower coverage area; i.e. it provides a speech enhanced signal when the first gradient microphone is being aimed at the speech source location. Barlett, Josephson et al, or McAteer each teaches such a first order gradient microphone. Thus, it would have been obvious to

one of ordinary skill in the art to modify Wakui's, Mitchell's or Marash's system by utilizing first-order gradient microphone or a plurality first-order gradient microphones as the reception transducers in order to receive a sound from a particular direction, and thus providing a noise reduced speech signal when the speech source is at a predetermined location.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ping Lee whose telephone number is 703-305-4865. The examiner can normally be reached on Monday and Tuesday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W Isen can be reached on 703-305-4386. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

  
Ping Lee  
Primary Examiner  
Art Unit 2644

pwl  
September 5, 2003